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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,142	10/18/2001	David Marshall Holcomb	10010860-1	7550

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EXAMINER

LEE, TOMMY D

ART UNIT	PAPER NUMBER
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2624

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/982,142

Applicant(s)

HOLCOMB, DAVID MARSHALL

Examiner

Thomas D. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-26,31-35,39,41 and 43 is/are allowed.
- 6) ☒ Claim(s) 1-3,17,27,28,36-38,40 and 42 is/are rejected.
- 7) ☒ Claim(s) 4-16,29 and 30 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/22/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 36 and 37 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Functional descriptive material comprising computer programs or algorithms (applicant's "processor-executable instructions") must be embodied on a *computer* readable medium (MPEP 2106.IV.B1(a)).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 42 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 42 recites the limitation "the attribute definer" in line 7. There is insufficient antecedent basis for this limitation in the claim. It is unclear whether the attribute definer is an additional component, or whether it refers to the previously-recited distortion compensator.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 17, 27, 28, 38, 40 and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,776,013 (Kafri et al., hereinafter Kafri).

Regarding claims 1 and 2, Kafri discloses a method of encoding binary data for transmission over an image data channel, comprising: defining encoding parameters adapted for encoding the binary data in such a manner that a transformed linear matrix image produced by transmitting an encoded linear matrix image over the image data channel is reconstructable into the encoded linear matrix image (master grid 14 applied to encoder 12 to produce encoded grid 16 to be transmitted, master grid 24 applied to decoder 22 to reconstruct image as decoded grid 30 (column 2, line 58 – column 3, line 24), encoding parameters inherent within master grid); and encoding the binary data into the encoded linear matrix image according to the encoding parameters (by means of encoder 12). The method further comprises: electronically storing the encoded linear

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matrix image as an image file (image matrix stored in image memory 44 (column 3, lines 38-43)).

Regarding claim 17, Kafri discloses a method of encoding binary data for transmission over an image data channel, comprising: encoding the binary data into a linear matrix image having attributes which ensure that a transformed linear matrix image produced after the transmission over the image data channel is decodable so as to reconstruct the binary data from the transformed linear matrix image (digitizer 42 applied to scanned image, converted to image matrix with intensity values for white and black (column 3, lines 38-43)); and electronically storing the linear matrix image as an image file (image matrix stored in image memory 44 (column 3, lines 38-43)).

Regarding claims 27 and 28, Kafri discloses a method of sending binary data over an image data channel, comprising: encoding the binary data into an encoded linear matrix image (digitizer 42 applied to scanned image, converted to image matrix with intensity values for white and black (column 3, lines 38-43)); transmitting the encoded linear matrix image over the image data channel (encoded image matrix transmitted by transmitter 50 (column 3, line 67 – column 4, line 6)); and decoding the received linear matrix image to recover the binary data (encoded grid received by receiver 52 and decoded in decoder 54 (column 4, lines 7-11)). The transmitting includes distorting the encoded linear matrix image to form a transformed linear matrix image, and the decoding includes decoding the transformed linear matrix image (image matrix distorted by means of master grid 14 (column 3, lines 3-24)).

Regarding claim 38, Kafri discloses a method for encoding binary data for transmission over an image data channel, comprising: a step for defining encoding parameters adapted for encoding the binary data in such a manner that a transformed linear matrix image produced by transmitting an encoded linear matrix image over the image data channel is reconstructable into the encoded linear matrix image (master grid 14 applied to encoder 12 to produce encoded grid 16 to be transmitted, master grid 24 applied to decoder 22 to reconstruct image as decoded grid 30 (column 2, line 58 – column 3, line 24), encoding parameters inherent within master grid); and a step for encoding the binary data into the encoded linear matrix according to the encoding parameters (by means of encoder 12).

Regarding claim 40, Kafri discloses an apparatus for encoding binary data for transmission over an image data channel, comprising: defining means for defining encoding parameters adapted for encoding the binary data in such a manner that a transformed matrix image produced by transmitting an encoded linear matrix image is reconstructable into the encoded linear matrix image (master grid 14 applied to encoder 12 to produce encoded grid 16 to be transmitted, master grid 24 applied to decoder 22 to reconstruct image as decoded grid 30 (column 2, line 58 – column 3, line 24), encoding parameters inherent within master grid); and encoding means for encoding the binary data into the encoded linear matrix image according to the encoding parameters (by means of encoder 12).

Regarding claim 42, Kafri discloses for encoding binary data for transmission over an image data channel, comprising: a distortion compensator which defines

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encoding parameters adapted for encoding the binary data in such a manner that a transformed matrix image produced by transmitting an encoded linear matrix image is reconstructable into the encoded linear matrix image (master grid 14, which distorts image by encryption, applied to encoder 12 to produce encoded grid 16 to be transmitted, master grid 24 applied to decoder 22 to reconstruct image as decoded grid 30 (column 2, line 58 – column 3, line 24), encoding parameters inherent within master grid); and a linear matrix encoder communicatively coupled to the attribute definer (assumed here to refer to the distortion compensator) which encodes the binary data into the encoded linear matrix according to the encoding parameters (encoder 12).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kafri.

Regarding claim 3, Kafri does not disclose associating the image file with a web page. However, transmission of web pages (over the Internet) has been well known in the art, and it would have been obvious for one of ordinary skill in the art to modify the teaching of Kafri so as to provide for transmission of encrypted web pages via an image data channel, so that sensitive information transmitted via the Internet may be protected.

Regarding claim 36, which recites a processor-readable medium that causes a processor to perform the steps of above-rejected claim 1, Kafri does not disclose such a medium. However, it is well known in the art that processing steps in general may be implemented as instructions stored in memory devices such as a conventional read-only memory, and it would have been obvious for one of ordinary skill in the art to provide a processor-readable medium in the apparatus disclosed in Kafri, so that the processing steps may be performed without requiring the manual input of such instructions by a user.

Allowable Subject Matter

9. Claims 18-26, 31-35, 39, 41 and 43 are allowed.
10. Claims 4-16, 29 and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
11. The following is a statement of reasons for the indication of allowable subject matter: No prior art has been found to disclose or suggest analyzing image-distortion characteristics of an image data channel so as to define attributes of an encoded linear matrix image, the attributes defined such that a transformed linear matrix image formed by distorting the encoded linear matrix image according to the image-distortion characteristics is reconstructable into the linear matrix image, as recited in base claim 18; or decoding a header section of a received linear matrix image, analyzed to determine image-distortion characteristics of an image data channel, according to the image-distortion characteristics so as to recover at least one encoding parameter

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previously used to encode the binary data, as recited in base claims 19 and 39 and similarly recited in base claims 41 and 43; or an encoded linear matrix image representative of binary data, including a predetermined tuning pattern proximate a detection key, the predetermined tuning pattern comparable to a transformed tuning portion of a transformed linear matrix image so as to define image-distortion characteristics of the channel, as recited in base claim 31.

Furthermore, no prior art has been found to disclose or suggest encryption of binary data, prior to encoding the binary data into an encoded linear matrix image according to encoding parameters, as recited in dependent claim 4; or identifying image-distortion characteristics of an image data channel, wherein the defining includes analyzing the image-distortion characteristics so as to determine the encoding parameters, as recited in dependent claim 5; or wherein the binary data represents a firmware upgrade for a printing apparatus, as recited in dependent claim 6; or wherein the encoding further includes encoding a data section of the encoded linear matrix image, the data section having a plurality of regions of colored data markings, each of the data marking regions representative of a predetermined quantity of the binary data, as recited in dependent claim 7; or wherein the distortion includes rendering the encoded linear matrix image with a web browser to form a partially-transformed linear matrix image, as recited in dependent claim 29.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas D. Lee whose telephone number is (571) 272-

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7436. The examiner can normally be reached on Monday-Friday (7:30-5:00), alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on (571) 272-7437. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thomas D. Lee
Primary Examiner
Art Unit 2624

tdl
August 19, 2005